

## Responses to Questions from Town Presentation

- **What are all of our “safety factors” in the modelling?**
  - “National primary ambient air quality standards, prescribed under subsection (a) of this section shall be ambient air quality standards the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health.”
  - For National Ambient Air Quality Standards (NAAQS) evaluations, fence-line receptors are required to be spaced no greater than every 25 meters along the property. To be conservative, we placed receptors every 20 meters along the fence line, and additionally extended out to a distance of 80 meters from the fence line . This “wall” of receptors provided a higher definition of emissions than what a single line of fence line receptors should show.
  - A 1/3 arc-second (~10m resolution) dataset was used, which is the highest resolution available for the Ledyard, Connecticut region as compared to the ~30m resolution, which is also viable for NAAQS models and often used because it processes faster.
  - Blasting emissions were modeled as occurring 2 times a day for 2 back-to-back days a week, simultaneously with all other process emissions operating at the same time. In reality, all other processes would not be operating at the time of blasting. Additionally, this is the maximum frequency at which blasting would occur- 4 times over the course of 2 days. This was done to represent a worst-case-scenario for 24-hour emissions calculations and significantly exceeds the design blasting protocol for the project of a maximum of 2 blasts per week.
  - Process emissions were modeled as occurring 24 hours a day, 365 days a year, at 100% capacity. In reality, processes will not be in operation outside of working hours and may not always be operating at 100% capacity. The emission factors are calculated by way of AP-42 formulas for Crushed Stone Processing.
- **What is the source of particulate generated by a lawn mower as utilized in my example?**
  - Particulate generated by a typical lawn mower includes No<sub>2</sub>, pollen and particularly dust when mowing on dry soil.
- **Nighttime Concentration- Dust concentration at night is zero. Are the modeled concentrations averaging the high daytime values with the zeroes?**
  - No. Emission factors for the operations were calculated by way of AP-42 formulas, which solve for annual emissions based upon production values (i.e., tons-per-year of dust was calculated based upon the proposed tons of production per year). Once the tons-per-year emissions value was calculated, it was divided by the number of actual operating hours per year, which is 3,120 hours per year (60 hrs/wk, for 52 wks/year). This provides the pounds-per-hour (lbs/hr) emission factor for the site

operations. As the startup/stop times of operations are not precise, the model conservatively assumes that this baseline pound-per-hour emission factor is emitted constantly (8,760 hrs/yr). The only item that cannot be modeled this way is blasting, which was modeled as variable emissions sources that occur over short period of times throughout the day. AERMOD can't process an instantaneous source; so we assumed the duration of time blasting operations would be running within a day (within a 2 hour period), divided by the amount of materials that would get displaced to create an emissions rate.

- **Are vehicle emissions from diesel combustion included in the model? How are these emissions regulated.**
  - The particulate generated from the driving of the vehicles and mobile equipment are included in the model but not from diesel combustion.
  - Otherwise, road vehicles are regulated under a separate set of federal rules, depending on whether the vehicle is classified as a passenger car, or light/medium/heavy-duty trucks. Road vehicles are not permanent emission sources onsite, so they are subject to facility air permitting.
  - The only overlap between the National Ambient Air Quality Standards (NAAQS) and on-road transportation vehicles (mobile equipment) is that in “nonattainment areas” (i.e., areas that do not meet the NAAQS in ambient air), the states are required to adopt specified transportation control measures to limit emissions. This is not the case for Connecticut.
  - Transportation conformity ("conformity") is a way to ensure that Federal funding and approval goes to those transportation activities that are consistent with air quality goals. Conformity applies to transportation plans, transportation improvement programs (TIPs), and projects funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA) in areas that do not meet or previously have not met air quality standards for the NAAQS. These areas are known as "nonattainment areas" or "maintenance areas," respectively. Ledyard, CT is not in a nonattainment area.
- **What permits might apply to the facility?**
  - Multi-Sector General Permit (Stormwater) – CTDEEP – Is required if there is a point source discharge of stormwater.
  - State Air Permit– CTDEEP - not anticipated, as site air emissions will be below state and federal permit thresholds.
  - Construction Permits/Construction Stormwater Permit/Approvals – Town of Ledyard
- **Which agencies will have permitting or regulatory authority over the site?**
  - In addition to the above, Department of Transportation for applicable shipping regulations, OSHA/MSHA for worker safety and Connecticut DEEP.

- **How did we pick the weather stations for background levels?**
  - Background data for PM10 and PM2.5 were obtained from the closest and/or most representative air monitoring sites to the Facility. The Fort Griswold Station, located in Groton, was the closest station for PM2.5. Since PM10 is not monitored at the Fort Griswold Station, the Criscuolo Park Station, in New Haven was used as the source of the PM10 background data. Sea breezes are very common in the Ledyard area, so the coastal Criscuolo station was determined as the most representative.
  - We discussed location usage with CTDEEP, and they confirmed they would request these points to be used for modelling if required for permitting.
- **Does the weather data include pressure?**
  - Yes. AERMET requires surface station pressure for some of its computations. This is included in the meteorological data that is input into the model. Calculations are performed by the AERMOD program.
- **Are the NAAQS required?**
  - Yes. NAAQS are the Clean Air Act standards for “ambient air”, which is defined as “that portion of the atmosphere, external to buildings, to which the general public has access”